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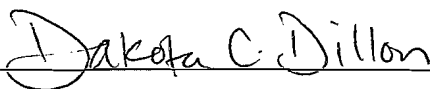
PRE-APPEAL BRIEF REQUEST FOR REVIEW

Docket Number (Optional)

BOR-012

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Typed or printed name Dakota C. Dillon

Application Number

10/710,356

Filed

March 8, 2010

First Named Inventor

Steven T. Shaughnessy

Art Unit

2168

Examiner

Aaron J. Sanders

Applicant requests review of the final rejection in the above-identified application. No amendments are being filed with this request.

This request is being filed with a notice of appeal.

The review is requested for the reason(s) stated on the attached sheet(s).

Note: No more than five (5) pages may be provided.

I am the

☐

applicant/inventor.

☐

assignee of record of the entire interest.
See 37 CFR 3.71. Statement under 37 CFR 3.73(b) is enclosed.
(Form PTO/SB/96)

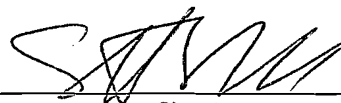
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attorney or agent of record.
Registration number 51,893

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attorney or agent acting under 37 CFR 1.34.

Registration number if acting under 37 CFR 1.34 _____



Signature

Scott S. Kokka

Typed or printed name

(650) 566-9921

Telephone number

March 8, 2010

Date

NOTE: Signatures of all the inventors or assignees of record of the entire interest or their representative(s) are required. Submit multiple forms if more than one signature is required, see below*.

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*Total of 1 forms are submitted.

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re the Application of:
Steven T. Shaughnessy

Application Serial No.: 10/710,356

Filing Date: July 2, 2004

For: DATABASE SYSTEM PROVIDING HIGH
PERFORMANCE DATABASE
VERSIONING

Examiner: Aaron J. Sanders

Group Art Unit: 2168

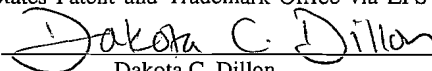
Date: March 8, 2010

Atty. Docket No.: BOR-012

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Dakota C. Dillon

Pre-Appeal Brief Request for Review

Dear Sir:

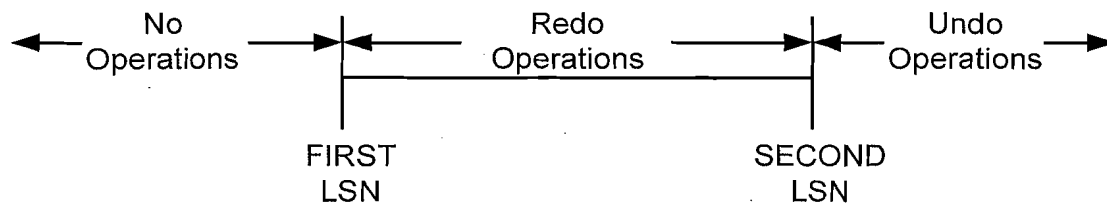
In response to the Final Office Action mailed November 9, 2009, Applicant kindly requests consideration of the following arguments in support of this pre-appeal brief request for review, which accompanies Applicant's notice of appeal.

Arguments

The Examiner has rejected claims 31-33 and 36-43 under 35 U.S.C. §103(a) as being unpatentable over Klein et al. (U.S. 6,631,374; hereinafter "*Klein*"), in view of Ganesh et al. (U.S. 6,192,377; hereinafter "*Ganesh*"), in view of Weems ("Shadow Cache," University of Massachusetts, May 2004; hereinafter "*Weems*"), in further view of Natarajan et al. ("Log Sequence Numbers," University of Wisconsin, May 2003; hereinafter "*Natarajan*"). The Examiner has rejected claims 34-35 under 35 U.S.C. §103(a) as being unpatentable over *Klein*, in view of *Ganesh*, in view of *Weems*, in view of *Natarajan*, and in view of Hayashi et al. (U.S. 5,715,447; hereinafter "*Hayashi*"). The Examiner has rejected claims 38 and 52 under 35 U.S.C. §103(a) as being unpatentable over *Klein*, in view of *Ganesh*, in view of *Weems*, in view of *Natarajan*, and in view of *The Authoritative Dictionary of IEEE Standards Terms, Seventh Edition*, IEEE Press, 2000 (hereinafter "*IEEE*"). The Examiner has rejected claims 41 and 55 under 35 U.S.C. §103(a) as being unpatentable over *Klein*, in view of *Ganesh*, in view of *Weems*, in view of *Natarajan*, and in view of Raz (U.S. 5,701,480, hereinafter "*Raz*"). The Examiner has rejected claims 44-51 and 53-54 under 35 U.S.C. §103(a) as being unpatentable over *Klein*, in view of *Ganesh*, in view of *Weems*, in view of *Natarajan*, and in view of DeWitt, Jr. et al. (U.S. 7,093,081, hereinafter "*DeWitt*").

These rejections are respectfully traversed because one or more essential elements necessary for a prima facie obviousness rejection under 35 U.S.C. §103(a) are not taught or suggested by *Klein*, *Ganesh*, *Weems*, *Natarajan*, *Hayashi*, *IEEE*, *Raz*, or *DeWitt*. More specifically, at least the limitations relating to performing physical redo operations and physical undo operations as recited in claim 31 are not taught or suggested in *Klein*, *Ganesh*, *Weems*, *Natarajan*, *Hayashi*, *IEEE*, *Raz*, and *DeWitt*.

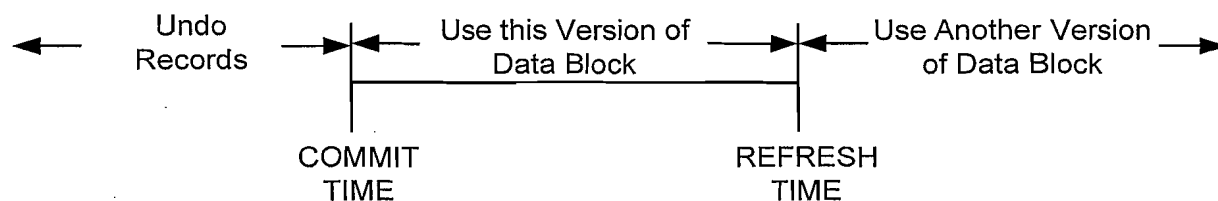
Claim 31 recites the limitation “performing physical redo operations or physical undo operations based upon the comparing as the another modified block is loaded into the read-only cach view.” These operations are performed when specific conditions are met. As recited in claim 31, “...the physical redo operations or physical undo operations are not performed on the modified block when the log sequence number is less than the fist log sequence number, and wherein the physical redo operations are performed on the modified block when the log sequence number is greater than the first log sequence number and less than the second log sequence number, and wherein the physical undo operations are performed on the modified block when the log sequence number is greater than the second log sequence number....” Applicant submits below a chart summarizing these conditions as recited in claim 31.



The Examiner asserts on page 3 and 4 of the Office Action dated November 9, 2009 that the combination of *Natarajan* and *Ganesh* teaches the specific conditions when physical redo operations and undo operations are to be performed as recited in claim 31. Assuming arguendo that it would have been obvious to one of ordinary skill in the database art at the time of the invention to combine *Natarajan*’s log sequence numbers with *Ganesh*’s commit and refresh times, the Examiner has nonetheless clearly misconstrued the express teachings of *Ganesh*.

The Examiner has relied upon FIG. 2 of *Ganesh* to teach the limitations summarized above with respect to claim 31. FIG. 2 teaches a method for determining whether a transaction can use a version of a data item. “In step 206 a determination is made as to whether the snapshot

time used by a transaction that requires access to data block 106 is *equal to or earlier than data buffer refresh time* 122.... Under these conditions, ... *another version of data block 106 is used*" (emphasis added). See *Ganesh*, col. 9, line 55 to col. 10, line 7. "If on the other hand, ... the snapshot time is *not equal to or later than data buffer commit time* 124, then the version of data block 106 in data buffer 114 is too new and contains changes that cannot be seen by the transaction, and therefore cannot be used. Instead, in step 212 the changes that cannot be seen by the transaction are removed ... by *applying undo records*" (emphasis added). See *Ganesh*, col. 10, lines 8-19. "If ... the snapshot time is *greater than the data buffer commit time* ... [and if] the active transaction flag 125 is not set, then in step 216, the *version of data block 106 in data buffer 114 can be used*" (emphasis added). See *Ganesh*, col. 10, lines 19-29. As defined in column 8, lines 15-19 of *Ganesh*, "data buffer 114 defines a time range that corresponds to the state of the data items within buffer 114. Within the transaction summary data 118, data buffer *refresh time* 122 defines the high end of the range, while data buffer *commit time* 124 defines the low end of the range. Applicant submits below a chart summarizing these conditions in *Ganesh*.



Applicant respectfully points out that claim 31 of the present invention recites performing redo and undo operations based upon different conditions than that taught in *Ganesh*. While *Ganesh* teaches that undo operations are performed when the snapshot time is less than commit time, claim 31 recites that "the physical redo operations or physical undo operations are not performed" under analogous conditions. *Performing undo operations is not the same as not*

performing any operations. While *Ganesh* teaches using the current version of the data block (i.e., redo and undo operations are not performed) when the snapshot time is between the commit time and the refresh time and the active transaction flag is not set, claim 31 recites that “physical redo operations are performed” under analogous conditions. *Not performing any operations is not the same as performing physical redo operations*. While *Ganesh* teaches using another version of the data block (i.e., redo and undo operations are not performed) when the snapshot time is greater than the refresh time, claim 31 recites that “physical undo operations are performed” under analogous conditions. *Not performing any operations is not the same as performing physical undo operations*. Thus under similar conditions, *Ganesh* and the present invention perform completely different operations.

The Examiner ignores this importance of these distinctions by misconstruing the conditions as explicitly taught in *Ganesh*.

The Applicant respectfully submits that the Examiner is clearly in error for rejecting the claims in the present application under the legal standards for § 103(a). More specifically, *Ganesh* does not teach or suggest performing undo and redo operations in accordance to the conditions as recited in claim 31. Consequently, claims 31 – 55 are non-obvious in view of the cited sections of *Klein*, *Ganesh*, *Weems*, *Natarajan*, *Hayashi*, *IEEE*, *Raz*, and *DeWitt*. If at any time the Examiner believes that an interview would be helpful, please contact the undersigned.

Respectfully submitted,



Scott S. Kokka
Reg. No. 51,893

KOKKA & BACKUS, PC
200 Page Mill Road, Suite 103
Palo Alto, CA 94306-2022
Tel: (650) 566-9921
Fax: (650) 566-9922